Serial No. 10/636,623

REMARKS

The Applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claim Rejections 35 USC § 102

The Examiner has rejected claims 1, 11, and 13 under 35 U.S.C. § 102(e) as being allegedly anticipated by United States Patent No. 6,363,306 to Palmertz et al. ("Palmertz"). Applicants respectfully traverse this rejection.

Claim 1 recites a means for determining that the vehicle is rolling over when the difference between two angular velocities exceeds a predetermined value, such that the determination is "made solely based on the difference between the two angular velocities." Similarly, claim 11 recites "a roll detector for determining whether the vehicle is rolling over based solely on whether the difference between the first and second rolling angular velocities exceeds a predetermined value." In other words, in each of these claims, rollover of a vehicle is determined solely based on a difference between angular velocities detected at a predetermined time interval. No other data (e.g., lateral acceleration) is used to whether the vehicle is about to roll over. This allows the rollover determination to be made quickly, and further allows for the rapid activation of a passenger protecting device, such as an airbag. Applicants maintain that this feature is not disclosed or suggested in Palmertz.

The Examiner has asserted that a difference between two angular velocities is shown in column 10, lines 15-20, of Palmertz, which states that the values regarding the angular acceleration $\ddot{\phi}$ about the longitudinal axis of the vehicle (i.e. the x-axis) and the angular acceleration $\ddot{Y}$ about the latitudinal axis of the vehicle (i.e. the y-axis) can be calculated in the control unit 3, and can be utilized to determine whether there is a roll-over state. (See, e.g.,

Palmertz, column 10, lines 15-20.) However, even if the disclosed angular accelerations $\ddot{\phi}$ and $\ddot{Y}$ do show the recited difference between two angular velocities, Palmertz still does not disclose the recited feature of making a rollover determination based solely on this difference.

The Examiner has asserted that this feature is shown by steps 16, 17, and 18 in FIG. 2 of Palmertz. In particular, he alleges that a "yes" determination is made solely based on angular velocities. However, a careful examination of this and other portions of Palmertz will show that this is not the case.

As shown in FIG. 2 of Palmertz, a series of determinations are made to determine whether to activate the protective device (block 13). In the portion cited by the Examiner, there is a check as to whether the side acceleration $\ddot{y}$ of the vehicle exceeds a predetermined threshold value D (block 16). If $\ddot{y} > D$, there is a check as to whether the current angular position ϕ exceeds a further threshold value E (block 17). And $\phi >$ E, the control unit checks whether the period of time t during which the side acceleration $\ddot{y}$ has exceeded the threshold value D exceeds an additional threshold value F (block 18). Only if the value of the period of time t exceeds the threshold value F, will the control unit activate the protective device (block 13). (See, e.g., Palmertz, column 10, line 58, through column 11, line 17, and FIG. 2.)

The decision process in blocks 16-18 of FIG. 2 of Palmertz is not made solely on any measurement, much less a difference between two angular velocities. In particular, Applicants note that the device disclosed in Palmertz makes three separate determinations (i.e., whether a side acceleration $\ddot{y}$ is greater than a threshold D, whether a current angular position ϕ exceeds a threshold E, and whether a period of time t exceeds a threshold F), none of which involve a difference between two angular velocities.

In fact, the only time that either of the angular accelerations $\ddot{\phi}$ and $\ddot{Y}$ (which the Examiner has asserted show the recited difference between two angular velocities) is used is in block 31 of FIG. 2 in Palmertz. Here, Palmertz notes that if the acceleration $\ddot{x}$ does not exceed the threshold value Q, the angular position γ does not exceed the threshold value R or the time t does not exceed the threshold value S, there is a check as to whether the angular acceleration $\ddot{\phi}$ about the transverse axis of the vehicle exceeds a further threshold value T (block 31). If that is the case, there are checks as to whether the period of time during which this threshold value T has been exceeded is larger than a further threshold value U (block 32), whether the current value of the angular velocity $\dot{\phi}$ about the x-axis exceeds a threshold value V (block 33), and whether the angular position ϕ exceeds a further threshold value X (block 34). Only if all these checks come out true will the protective device be activated (block 13). Thus, no determination of whether the protective device should be activated is made solely based on the angular acceleration $\ddot{\phi}$. (See, e.g., Palmertz, column 12, lines 47, through column 13, line 4, and FIG. 2.)

In fact, in order for the device to ever get to block 13, where the angular acceleration $\ddot{\phi}$ is checked against the threshold T, the device will have had to make at a minimum eight separate checks (blocks 12, 14, 16, 19, 22, 25, 26, and 28) based on six different values (ϕ, $\dot{\phi}$, $\ddot{y}$, γ, $\dot{\gamma}$, and $\ddot{x}$), and may well have made up to ten additional checks (blocks 15, 17, 18, 20, 21, 23, 24, 27, 29, and 30) using up to four more different values (t, $|\dot{x}|$, θ, and $\ddot{\theta}$). (See, e.g., Palmertz, column 10, line 26, through column 12, line 53, and FIG. 2.) This cannot be considered to be a determination based "solely" on anything.

Thus, Palmertz does not disclose every feature recited in claims 1 and 11.

Claim 13 depends from claim 11 and is allowable for at least the reasons given in claim 11.

Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 1, 11, and 13 under 35 U.S.C. § 102(b) as being allegedly anticipated by Palmertz.

Claim Rejections 35 USC § 103

The Examiner has rejected claims 2, 9, 10, and 12 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz alone.

Claim 9 depends from claim 1 and is allowable for at least the reasons given above for claim 1. Claim 12 depends from claim 11 and is allowable for at least the reasons given above for claim 11. What Palmertz does not disclose above, it likewise does not suggest.

Claim 2 recites first means for calculating a difference between two rolling angular velocity values detected in the angular velocity sensor over a predetermined time interval; second means for calculating a rolling angle of the vehicle based on the angular velocity detected by the angular velocity sensor; and determining means for determining that the vehicle is rolling over, the determining being made first based on whether the difference calculated by the first means for calculating exceeds a predetermined value, and second based on the rolling angle calculated by the second determining means, if the difference does not exceed the predetermined value. Palmertz does not disclose these features.

The Examiner notes that Palmertz shows that the control unit 3 determines whether the angle ϕ about the x-axis exceeds a predetermined threshold value A (block 12), and that the control unit checks as to whether the side acceleration $\ddot{y}$ of the vehicle exceeds a predetermined threshold value D (block 16) checks as to whether the current angular position ϕ exceeds a

further threshold value E (block 17), and checks whether the period of time t during which the side acceleration $\ddot{y}$ has exceeded the threshold value D exceeds an additional threshold value F (block 18). (See, e.g., Palmertz, column 10, line 34, through column 11, line 17, and FIG. 2.)

The Examiner acknowledges that this does not show the first determining means making a determination based on the difference in rolling angular velocity values, and the second being based on a rolling angle. He then makes a blanket assertion that it would be obvious based on the teachings of Palmertz to switch the order of any of these determinations. Applicants respectfully traverse this assertion.

Palmertz specifically notes in its description of FIG. 2 that succeeding steps are only made if the prior checks are not true. It offers no suggestion that the specifically enumerated order should be varied.

Claim 10 depends from claim 2 and is allowable for at least the reasons given above for claim 2.

Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 2, 9, 10, and 12 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz alone.

The Examiner has rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz in view of Schiffmann. Applicants respectfully traverse this rejection.

Claim 6 depends from claim 1 and is allowable for at least the reasons given above for claim 1. Nothing in Schiffmann cures the deficiencies in Palmertz noted above. Claim 7 depends from claim 2 and is allowable for at least the reasons given above for claim 2. Nothing in Schiffmann cures the deficiencies in Palmertz noted above.

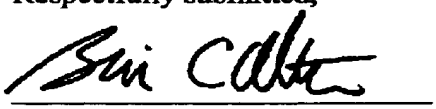
Therefore, based on at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 6 and 7 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Palmertz in view of Schiffmann.

Conclusion

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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